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CONSULTING GEOLOGISTS

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WEST VANCOUVER, B. C

REPORT ON

SELWYN EXPLORATIONS LTD. (N.P.L.)

SHELL CREEK IRON DEPOSIT

YUKON TERRITORIES

BY

GORDON P.E. WHITE

OCTOBER 18, 1967

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SUMMARY

Iron claims held by Selwyn Explorations Ltd. in the Yukon, cover a sedimentary, banded iron formation which has been traced for five and one half miles along strike. Preliminary assaying and beneficiation tests indicate a possible economic grade ore and concentrate.

A large open pit operation is considered feasible if 200 million tons of 30 - 35% Fe could be proven, and a graduated programme to explore this property is recommended.

INTRODUCTION

On October 4, 1967 a trip was made by helicopter to a group of iron claims held by Selwyn Explorations Ltd. (N.P.L.) in the Dawson Mining Division of the Yukon Territory.

The discovery of iron was first reported in this locality during 1956, and subsequent exploration work by private industry and Government surveys outlined a large sedimentary iron formation.

Reference has been made to information on this property filed by Asbestos Corporation (Explorations) Ltd. with the Mining Recorder in Dawson City.

LOCATION AND ACCESSIBILITY

The Shell claim group was staked by Selwyn Explorations, at a location approximately 45 miles north-west of Dawson and eight miles along Shell Creek from the north bank of the Yukon River. The claims are 14 miles distant from the Clinton Creek Asbestos Mine which lies to the south-west.

There is a heliport at the base camp, and surface access to the property would be possible by improving a 4 mile road along Forty Mile River from the Clinton Creek Mine road to the Yukon River. From this latter point, transportation would be by barge for 7

inclusive were recorded at Dawson September 11, 1967, and Shell 12 - 27 inclusive on September 25, 1967.

HISTORY OF PROPERTY

Hans and Werner Krause reported this iron discovery in 1956 and their preliminary work showed 300 to 400 foot widths of iron formation east of Shell Creek, from which selected samples assayed as high as 48.7% Fe and 0.15% Ti.

The Krause claims were optioned in October 1957 and during the following field season, Asbestos Corporation established 47,600' of lines, 32 triangulation stations, did geological mapping and dip-needle surveying in addition to a programme of trenching and assaying. The results of their assays, filed with the Dawson Mining Recorder, have been tabulated and appended to this report. Asbestos Corporation reported no conclusions as to possible overall grade and tonnage and terminated their option, after which the Krause claims were allowed to lapse.

Reconnaissance mapping was carried out in this general area by the Geological Survey of Canada in 1961, and in 1966 a G.S.C. aeromagnetic sheet was published. Selwyn Explorations acquired the ground in September of 1967.

GENERAL GEOLOGY

Roddick and Green, G.S.C. Map 13, 1962, grouped this series of low grade metamorphosed sediments with possible minor volcanics, into a stratigraphic unit of Cambrian or Pre-Cambrian age. On the claims this sequence of bedded rocks is comprised of grey limestone, green chlorite schist, iron formation, phyllite and an epidote-chlorite rich rock, suggested by Asbestos Corporation to be volcanic in origin. The limestone beds are tentatively considered to be basal to this sequence, and lateral and vertical facies changes are evident by the thick interbeds of one rock type within the other in a given section.

Of lesser magnitude, interbeds of siltsone, quartzite, grit and greywacke are present, varying in thickness from thin beds to mere partings.

Asbestos Corporation mapped a small intrusive mass on Mount Simba, possibly of granodiorite composition.

STRUCTURAL GEOLOGY

Asbestos Corporation have mapped two limbs of a fold, interpreted as an anticline overturned to the north-east and plunging 10 degrees to 30 degrees south-east. Considerable drag folding has taken place on the crest (or trough) of the fold, as exhibited on the hillside

east of Shell Creek.

Interpretation of G.S.C. aeromagnetic map 4285 G recently published, suggests a shallow north-east dip on the south limb, a steeper south-west dip on the north limb, and a shallow dip south-east of the crumbled folds east of Shell Creek. Limited field examination of cleavage, jointing, grain gradation and casts in a section north-west of the camp area, suggests tops to the south on this south dipping north limb, which would suggest a syncline. However, detailed study would be required prior to arriving at any solution of the structure.

LITHOLOGY OF THE IRON FORMATION

In outcrops examined, the iron formation may best be described as a well bedded, banded iron formation, with $\frac{1}{4}$ inch to 2 inch cleanly washed, fine siltstones and quartzites interbedded, which comprise approximately thirty to thirty-five percent of the iron formation. The sharply contacted iron beds are chiefly composed of dense, black, fine grained magnetite, containing occasional octahedra of magnetite.

RESERVE POSSIBILITIES

The iron formation has been mapped by Asbestos Corporation over a strike length in excess of five miles,

and a G.S.C. aeromagnetic survey appears to confirm this lateral continuity of the banded iron formation. Asbestos Corporation report sections of iron formation 75 and 200 feet true width, separated by 300 feet of phyllite, and assays from trenches in the same area average 25% Fe. Earlier assays from the tightly folded section south-east of Shell Creek, indicated values in excess of 45% Fe.

With the qualification that detailed stratigraphic study with the aid of trenching, drilling and assaying is required to prove grade and tonnage, previous work has indicated possible tonnages well in excess of 200 million tons, which may average 30 - 35% Fe.

BENEFICIATION

To maintain a low unit shipping cost, it would be essential to produce a relatively pure iron oxide concentrate. Preliminary work by Britton Research has indicated a possible 63% Fe concentrate, at a fine grind using a Davis tube, from heads assaying 43.2% Fe. The minor constituent of the rock tested was argillaceous, and as most of the iron appears to be associated with siliceous beds, a better concentrate may be possible using a coarser grind. A total chemical analysis of the iron formation was not available, but this work is

currently under way.

TRANSPORTATION IN THE YUKON

At present, the Clinton Creek Asbestos and the Anvil base metal mines in the Yukon are preparing to go into production, and if the Shell Creek iron was proven to be economic, this deposit together with the above-mentioned asbestos and base metal mines, might provide sufficient justification for the capital expenditure required to construct a rail line to the coast. Crest Exploration, a subsiduary of Chevron Standard, is reported to have considered the possibility of shipping iron, in the form of slurry, through a pipeline to the coast, and the technological problems involved appear to have been solved.

A further consideration for the future is that iron, coal and limestone are all available in this immediate area, and the manufacture of pig iron in the Yukon is a distinct possibility.

CONCLUSIONS AND RECOMMENDATIONS

Reconnaissance field work by Government and private industry has outlined a banded iron formation of potentially large tonnage. In order to determine

whether the iron is present in economic grade, a two-stage programme of exploration is recommended.

Stage One would consist of stratigraphic and structural mapping, magnetometer surveying, trenching, assaying and bulk sampling, and roads, base camp, surveyed lines and contours would be necessary before commencing the mapping and geophysical programmes. Stage Two would include a drilling programme and a market and feasibility study, and the expenditures required to carry out this work would be as follows:

STAGE ONE

Roads 20 miles plus	$12,000.00
Camp	5,000.00
Radio communications	2,000.00
Transport	4,000.00
River Barge	2,000.00
Surveying, lines, contours	8,000.00
Geological mapping	6,000.00
Magnetometer survey	4,000.00
Trenching, bulldozer	10,000.00
Sampling, testing	6,000.00
Engineering and contingencies	10,000.00
	$69,000.00

STAGE TWO

Diamond drilling 6000' @ $15.	$ 90,000.00
Market & feasibility study	6,000.00
Engineering & contingencies	15,000.00
	$111,000.00
Total for the two stages	$180,000.00

In the event that the results of Stage One and Two were favourable, considerably larger sums of money should be made available for preproduction expenses.

Respectfully submitted,

GORDON P.E. WHITE & ASSOCIATES LTD.

Gordon P.E. White, P. Eng.

I, GORDON PATRICK EARL WHITE, of the Municipality of West Vancouver, in the Province of British Columbia, HEREBY CERTIFY:

1) THAT I am a registered Professional Engineer in the Province of British Columbia.

2) THAT I am a graduate of the University of New Brunswick with a degree of Bachelor of Science (1953)

3) THAT I am a Consulting Geologist, my residential address is 2975 Altamont Crescent, West Vancouver and my office is at 821 West Pender Street, Vancouver, B.C.

4) THAT I have visited the property discussed in this report on October 4, 1967.

5) THAT I have practised as a geologist for more than 14 years, examining and reporting on properties and mines in North America and Africa.

6) THAT a Registered Engineer in the Province of British Columbia, under my direction, on October 4, 1967, checked the staking of the claims and the staking was in order.

7) THAT I have no interest, direct or indirect in any company acquiring or intending to acquire control, nor do I expect to have any interest in Selwyn Explorations Ltd. (N.P.L.). Nor do I have any interest in the claims, direct or indirect, referred to in this report.

DATED AT West Vancouver this 18th day of October, 1967.

G.P.E. White

Gordon P.E. White, P. Eng.

TABLE 1

Results of 1958 trenching by Asbestos Corporation (Explorations) Ltd. All sample numbers increase from South to North.

Trench No.	Sample No.	Width	% Fe
1A			
	401	10'	25.0
	402	16'	26.2
	403	8'	28.0
	404	19'	14.4
	405	15'	12.0
	406	21'	7.3
	401 - 406	89'	
	407	20'	21.4
	408	22'	28.9
	409	21'	21.2
	410	14'	29.4
	411	9'	31.9
	412	19'	15.1
	413	14'	26.8
	414	18'	27.8
	407 - 414	137'	24.6% average
	415		
	416		

Trench No.	Sample No.	Width	% Fe
2	417	8'	17.4
	418	30'	31.6
Trench No.	Sample No.	Width	% Fe
3	424	13'	28.6
		4' Not sampled	
	425	14'	35.2
	426	10'	29.6
	424-426	41'	28.3%
Trench No.	Sample No.	Width	% Fe
4	436	36'	24.2
	437	18'	29.0
	438	17'	14.3
	439	33'	22.6
	440	21'	30.5
	441	22'	29.6
	436-441	147'	25.0%
	442	22'	10.7
	443	14'	22.5
Trench No.	Sample No.	Width	% Fe
5	430	36'	26.7
	431	32'	23.6
	432	31'	26.0
	433	17'	24.9
	430-433	116'	25.5%

Trench No.	Sample No.	Width	% Fe
5	433-434	26'	No sample, schist
	434	29'	26.5
	435	13'	24.9
	433-435	184'	22%